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A Social Ecological Study of Psychological Distress among Recently Immigrated, Latina Young Adults

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Abstract

The present study examined potential individual-, cultural-, and interpersonal-level determinants of psychological distress among young adult Latina immigrants during their initial months in the United States (US). Five hundred thirty participants (aged 18–23 years old) immigrated an average of one year before assessment. Higher levels of psychological distress (as measured by the Brief Symptom Inventory, Derogatis & Fitzpatrick, 2004) were associated with undocumented immigration status, more immersion in the dominant (US) society, and more acculturative stress. Participants who more strongly endorsed certain *marianismo* beliefs [i.e., Latina women should be (a) the spiritual leaders of their family and are responsible for the family's spiritual growth and (b) virtuous and chaste] indicated less distress. Participants who endorsed the belief that Latina women should be subordinate and self-silencing to maintain harmony in relationships reported more intense distress. Women who endorsed the belief that Latinas should be the main source of strength for their family also reported more distress. Participants' attachment to their social network served as a moderator of several direct effects. Participants who experienced close attachment to their social network and more ethnic immersion reported substantively less distress than other participants did. Participants reporting lower attachment and lower endorsement of the virtuous and chaste belief experienced more distress than their peers did. Participants indicating lower attachment and higher endorsement of subordinate and self-silencing beliefs also reported more distress than peers did. Finally, participants who spent less time in the US and reported lower

attachment indicated higher levels of distress. Findings inform interventions to eliminate mental health disparities affecting Latina young adults.

Keywords

Latina; psychological distress; immigrants; social and cultural determinants

Because Latina young adults have been a large and growing population in the United States (US), there has been considerable need for psychologists to attend to the psychological distress (i.e., frequency, intensity, and different types of psychological symptoms, such as depression, anxiety, and other forms of psychopathology) of this population and determinants of it (Colby & Ortman, 2015; Liang, Salcedo, Rivera, & Lopez, 2009; Moradi & Risco, 2006). Prevalence rates of depression have been higher for Latina women in comparison to non-Latina White women (Huang, Wong, Ronzio, & Stella, 2007). More than one third of Latinas in the US have experienced depressive symptoms (Bromberger, Harlow, Avis, Kravitz, & Cordal, 2004). Foreign-born Latina women are reported to be at risk for depression, suicide, and other psychological distress due to experiencing discrimination, poverty, and living in under-resourced communities soon after immigration (Alegría et al., 2007; Cabassa, 2003). Latina immigrants often have experienced stressors that accompany acculturation (i.e., the process involving multiple groups where contact between the groups influence a shift in culture for both the dominant and non-dominant groups, often with marked changes for the non-dominant, acculturating group; Berry, 2001). Furthermore, many Latina immigrants suffered psychological distress soon after arrival to the US and have not received services due to the limited availability of mental health care (Valdez, Dvorscek, Budge, & Esmond, 2011).

While existing studies have detailed the correlates and disproportionate rates of psychological issues among Latina immigrants, they have predominantly involved samples who resided in the US for several decades (Martinez, McClure, Eddy, & Wilson, 2011). Few studies have identified social and cultural correlates of mental health among Latina immigrants during their initial months in the US. Elucidating such potential determinants may help psychologists further research and develop culturally tailored counseling and outreach interventions for this growing population (Camacho et al., 2015; Capielo, Delgado-Romero, & Stewart, 2015; Chavez-Korell & Torres, 2014; Torres & Taknint, 2015). Guided by Bronfenbrenner's (1986) social-ecological theory of human development, the present study examined cultural, individual-level, and interpersonal factors hypothesized to influence psychological distress among the understudied population of recently immigrated Latina young adults (aged 18–23) during their initial months in the US.

Potential Cultural-Level Determinants

The following macrosystemic cultural factors have been theorized to relate with psychological distress among Latina young adults during their initial months in the US: (a) acculturation, (b) acculturative stress, and (c) *marianismo* beliefs. Acculturation—the multidimensional process that considers how heritage-cultural and receiving-cultural practices, values, and identifications interact when a person transitions into a new culture—

has long been suggested by researchers to impact psychological distress among Latina immigrants (e.g., Schwartz, Unger, Zamboanga, & Szapocznik, 2010). For example, Latina/os born in the US or who live in the US for a substantial amount of time have been found to be more likely to be diagnosed with depression and other psychiatric disorders than more recent Latina/o immigrants (Torres, 2010). Furthermore, Latina/o youth who (a) spoke mostly Spanish, (b) associated primarily with Spanish speakers, and (c) engaged in Latina/o cultural traditions were found to be less likely to use drugs and alcohol than their more acculturated peers (Allen et al., 2008). Hence, although young women in the present study had arrived recently to the US, we anticipated acculturation would be positively linked with psychological distress given that this relation has been observed among Latina/o immigrants residing in the US for decades.

Acculturative stress has been described as distinct from the acculturation process because the former refers to the psychosocial strain experienced by immigrants in response to challenges encountered while adapting to cultural differences in a new country (Arbona et al., 2010). Acculturative stress has been indicated to result often from social and systemic circumstances such as undocumented immigration status, language barriers, poverty, and discrimination (Cabassa, 2003; Viruell-Fuentes, 2007). Low self-esteem and high levels of anxiety, depression, suicide, and alcohol abuse all have been found to be positively linked with acculturative stress among both immigrant and US-born Latina/o adults (Cano et al., 2015; Hovey, 2000; Kim, Hogge, & Salvisberg, 2014; Torres, 2010). However, there has been a lack of information on the impact of acculturative stress on young adult Latina women during their initial months in the US. We predicted that acculturative stress would be especially acute among the present study's sample given their recent immigration, and that this stress would be positively linked with psychological distress given past findings with Latina/o immigrants residing in the US for decades. Such information may inform the timing of interventions to better address disproportionate psychological distress levels among this underserved population.

Marianismo has been described as a traditional cultural gender value reflecting both positive and negative dimensions of Latina femininity and familial hierarchy (Sanchez, Whittaker, Hamilton, & Zayas, 2015). Marianismo beliefs have been suggested to encourage women who adopt this worldview to be family-focused, passive, self-sacrificing, chaste, strong, and capable (Sanchez et al., 2015). Marianismo has been found to affect Latinas' psychological distress in complex ways (Castillo, Perez, Castillo, & Ghosheh, 2010; Moreno, 2007; Nuñez et al., 2015). For example, endorsement of the belief that Latinas should remain "morally pure" in thought and sexual behavior (i.e., the Virtuous and Chaste belief) has been found to be inversely related with depression, anxiety, and anger among Latina adults—most (72%) of whom had lived in the US for over 10 years (Nuñez et al., 2015). This link has been attributed to Latinas with nontraditional views on virtuous and chaste values potentially feeling more psychological distress because their beliefs are not congruent with Latina/o traditional norms concerning sexual morality. In addition, Latinas who endorsed beliefs that Latina women should be a source of familial strength and a spiritual leader of the family have been found to report higher levels of psychological distress (Nuñez et al., 2015). This result has been posited to be due to onerous expectations that that a Latina is responsible for the family's functioning and spiritual growth and serve as the main source of strength for her

family may cause excessive psychological burden. Finally, endorsing the importance of Latinas being subordinate and self-silencing to maintain harmony in relationships also was linked with increased cynicism and mistrust of others (Nuñez et al., 2015). Hence, emerging research on marianismo has informed us that, taken together, marianismo beliefs may serve as either risk or protective factors for mental health. Based on past research, we hypothesized that recently immigrated Latina young adults in the present study who endorsed marianismo beliefs less than their peers would experience more psychological distress. This hypothesis was based on notions posited by Nuñez et al. (2015) and others (D'Alonzo, 2012; Lorenzo-Blanco & Cortina, 2013) that holding beliefs that are not be congruent with traditional Latina/o culture may reflect a potential internal conflict that may manifest itself in negative emotional states during their initial months in the US.

Potential Individual-Level Determinants

Several individual-level factors have been hypothesized to associate with recently immigrated Latina young adults' psychological distress, including (a) socioeconomic status (SES), (b) marital status, (c) immigration documentation status, (d) time in US, and (e) age (Molina & Alcántara, 2013). First, Latina immigrants have been found to have lower rates of employment, education, and wages than their US-born Latina counterparts (Gonzales, 2008). Not surprisingly, large population-based studies established an inverse link between psychological distress and socioeconomic status (SES). This relation has been attributed to the stress and adversity of living in an impoverished environment (Matthews & Gallo, 2011). Hence, we assessed Latina young adult immigrants' perceptions of their families' SES during their childhood as an indicator of SES to study its relation with psychological distress. Second, being unmarried (i.e., divorced, separated, or widowed) has been linked with higher rates of depressive disorders among US-born Latinas and Latina immigrants (Darghouth, Brody, & Alegría, 2015). Therefore, we hypothesized that being married may be a potential protective factor against psychological distress in the present study. Third, undocumented immigrants have been found to experience increased psychological distress compared to documented immigrants in part because of fear of deportation, separation from family, English language difficulties, and economic stressors (Arbona et al., 2010; Rhodes et al., 2015). Hence, undocumented immigration status has been hypothesized to associate with higher psychological distress in the present study's sample. Fourth, Latina/o immigrants who have spent less time in the US have reported more psychological distress than their Latina/o immigrants reporting comparatively more time in the US (Martinez et al., 2011). Accordingly, we expected that relatively less time in the US would relate with greater psychological distress in the present study. Finally, distress caused by acculturation has been posited to affect older adults less intensely than their younger counterparts (Andreeva et al., 2009). Thus, although the age range of the participants of the present study was purposefully restricted to study young adults, we hypothesized that age would relate inversely with distress.

Potential Interpersonal-Level Determinant: Social Network Attachment

Attachment has been generally conceptualized as the emotional bond of an individual with family, close friends, and other significant people (Bowlby, 1982). The conceptualization of

attachment has expanded from solely referring to the familial bonds of infancy to also include the substantive, close mutual relationships of an individual throughout the course of their lifetime (Overbeek, Stattin, Vermulst, Ha, & Engels, 2007). As collectivism has been an important value in traditional Latina/o culture (e.g., Schwartz et al., 2011), attachment to one's social network has been suggested to serve as an especially influential microsystemic protective factor for Latina recent immigrants. Healthy levels of attachment have promoted (a) resilience to psychological distress (Rivera et al., 2008) and (b) avoidance of health risk behaviors in Latina/o adults (De La Rosa, Dillon, Schwartz, Rojas, & Duan, 2010). Additionally, social connections beyond family members (e.g., with friends, romantic partners) have been described as potentially capable of alleviating certain aspects of Latina young adult women's psychological distress (Parsai, Voisine, Marsiglia, Kulis, & Nieri, 2009). Therefore, we conceptualized attachment to social network as the level of trust and communication between recently immigrated Latina young women and each member of their social network (i.e., mothers, fathers, partners, and best friends; Armsden & Greenberg, 1987). We hypothesized that participants' attachment to social network would not only inversely relate with psychological distress but also moderate hypothesized relations between all the previously reviewed cultural- and individual-level predictors of psychological distress.

The Present Study

The overarching aim of the present study was to identify potential cultural-, individual-, and interpersonal-level determinants of psychological distress among young adult Latina immigrants during their initial months US. Based on the aforementioned reviewed literature, we tested the following hypotheses:

Cultural-Level Hypotheses

Recently immigrated Latina young adults reporting (a) more acculturation, (b) more acculturative stress, and (c) less endorsement of marianismo beliefs are hypothesized to report more psychological distress.

Individual-Level Hypotheses

Recently immigrated Latina young adults reporting (a) relatively lower SES indicators (e.g., employment status, education level, SES of family during participants' childhood), (b) unmarried relationship status, (c) undocumented immigration status, (d) less time in US, and (e) older age are hypothesized to report more psychological distress.

Interpersonal-Level Hypotheses

First, we hypothesized that more participant attachment to social network would directly relate with less reported psychological distress. Second, we hypothesized that attachment to social network would moderate the positive relations between detrimental cultural- and individual-level correlates of psychological distress while accounting for the participants' level of separation from their social network due to immigration. That is, young women who indicate more detrimental cultural- and individual-level factors are expected to report less psychological distress when they also experience higher attachment to their social network.

Method

Participants

Five hundred and thirty Latina young adults participated in the present study. All participants recently immigrated to Miami-Dade County, Florida, US. At the time of assessment, participants resided in the US for 36 months or less ($M = 12.00$ months, $SD = 9.94$ months). Participants' ages ranged from 18 to 23 years ($M = 20.81$ years, $SD = 1.80$ years). Motivations for immigration were economic (57.9%), to reunite with family (28.6%), and/or political (5.3%). In terms of education, 57% of participants reported earning a degree similar to a US high school diploma, and 30% earned either a bachelor's or trade school equivalent degree. Approximately 66% of participants were unemployed. Seventeen percent of participants reported an undocumented immigration status at assessment. Fourteen percent ($n = 74$) reported being married at the time of assessment.

Participants identified as Cuban (34%), Colombian (11.1%), Nicaraguan (7.5%), Honduran (6.4%), Peruvian (5.7%), Mexican (5.1%), Venezuelan (4.9%), Ecuadorian (3.6%), Panamanian (3.6%), and Dominican (3.0%). The remaining 15% were from Argentina, Bolivia, Chile, Costa Rica, El Salvador, Guatemala, Paraguay, or Uruguay.

Measures

Bilingual research assistants conducted interviews in Spanish with consenting participants. Interviewers administered measures that were either validated in Spanish, or English-only versions of measures. English-only measures were adapted via (a) translation and back translation, (b) modified direct translation, and (c) checks for semantic and conceptual equivalence by the research team to ensure accurate translation from English to Spanish (Behling & Law, 2000).

Psychological distress—To comprehensively assess the range of potential psychological distress experienced by participants, distress level was measured via three global indexes of the Spanish version of the Brief Symptom Inventory (BSI; Derogatis & Fitzpatrick, 2004): the Global Severity Index (GSI), the Positive Symptom Total (PST), and the Positive Symptom Distress Index (PSDI). The BSI is a 53-item self-report inventory that measures the extent to which individuals have been bothered in the past week by various symptoms using a 5-point Likert-type scale (0 = *Not at all*, 4 = *Extremely*). Items include, "Feeling that people are unfriendly or dislike you" and "Feelings of worthlessness."

The GSI score indicated each participant's level of psychological distress, and higher scores indicated more problematic functioning. The GSI was calculated using the sums for the nine symptom dimensions plus the four additional items not included in any of the dimension scores, and dividing by the total number of items to which the individual responded. The GSI has demonstrated evidence of reliability (Derogatis & Fitzpatrick, 2004). The present study's sample yielded a Cronbach's alpha of .98 for the GSI.

The PST represented a count of the number (or breadth) of symptoms measured by the BSI. It was calculated by summing the number of nonzero responses on all 53 items.

The PSDI was calculated as the average of all nonzero-rated BSI items. Thus, the PSDI measured intensity rather than number of symptoms. Evidence of construct validity of the Spanish version of the BSI has been reported based on measurement invariance testing (Hoe & Brekke, 2009).

Potential cultural-level determinants of psychological distress

Acculturation: Acculturation was measured using the Stephenson Multigroup Acculturation Scale (SMAS; Stephenson, 2000). The scale assessed acculturation or changes in a one's cultural practices that occurred through interactions with people of different cultures or ethnic groups. The SMAS is a 32-item measure in which participants respond on a 4-point Likert-type scale (1 = *False*, 2 = *Partly False*, 3 = *Partly True*, 4 = *True*). Two subscales constitute the SMAS: ethnic society immersion and dominant society immersion. High scores on the ethnic society immersion subscale reflect more immersion in ethnic language, interactions, media, and food; while high scores on the dominant society immersion subscale reflect more immersion in dominant society language, interaction, media, and food. Sample items include the following: "I think in my native language" (Ethnic Society Immersion), and "I feel at home in the United States" (Dominant Society Immersion). Ethnic society immersion and dominant society immersion subscale scores were calculated by averaging across item responses for each subscale. Both subscales of the SMAS have evidenced support of acceptable reliability and validity via factor analysis for construct validity and correlations with ethnic group affiliation, and other measures of acculturation for concurrent validity (Ford & Kelly, 2005). The SMAS subscales evidenced adequate internal consistency for Ethnic Society Immersion ($\alpha = .93$) and Dominant Society Immersions ($\alpha = .91$) in the present study's sample.

Acculturative Stress: The Social, Attitudinal, Familial, Environment Acculturative Stress Scale (SAFE; Mena, Padilla, & Maldonado, 1987) measured acculturative stress. The SAFE is a 24-item measure that uses a 5-point Likert-type scale format (1 = *Not at all*, 5 = *Extremely stressful*). Items in the SAFE include, "I was insulted or treated poorly," and "Members of my family cannot communicate in public places." More acculturative stress is indicated by higher SAFE total scores. SAFE total scores were calculated by averaging across item responses. The SAFE total score has yielded evidence of both internal consistency and construct validity via factor analysis (Fuertes & Westbrook, 1996) and concurrent validity by correlating the SAFE with depression and immigration generational status (Hovey, 2000). In the present study's sample, the internal consistency estimate of the SAFE total score was $\alpha = .97$.

Marianismo: The Marianismo Beliefs Scale (MBS; Castillo et al., 2010) assessed the extent to which participants endorsed the marianismo construct. The MBS is a 24-item measure that consists of five subscales: (a) Family Pillar, endorsing the belief that Latinas are the family's main source of strength and are responsible for unifying the family; (b) Virtuous and Chaste, endorsing the belief that Latinas should be "morally pure"; (c) Subordinate to Others, endorsing the belief that Latinas must show respect and obedience to the traditional Latina/o hierarchy of power; (d) Self-Silencing to Maintain Harmony, endorsing the belief that Latinas should not share personal needs or thoughts to maintain harmony in

relationships; and (e) Spiritual Pillar, endorsing the belief that Latinas are the family's spiritual leaders and are responsible for the family's spiritual growth (Castillo et al., 2010). Items are rated on a 4-point Likert-type scale (1 = *Strongly disagree*, 4 = *Strongly agree*), and include, "A Latina should be loyal to her partner" (Virtuous and Chaste), and "A Latina should avoid saying 'no' to people" (Subordinate to Others). Each MBS subscale score was calculated by averaging across item responses per subscale, and higher scores indicate more endorsement of beliefs for each subscale. Adequate evidence of internal consistency and construct validity has been suggested via factor analyses, convergent and divergent validity tests by finding correlations between MBS scores and measures of acculturation, familismo, self-construal, and silencing self (Castillo et al., 2010). The present study's sample yielded internal consistency estimates ranging from .88 to .97 for the five MBS subscales.

Potential individual determinants of psychological distress

Sociodemographic variables: Participants provided their socioeconomic and demographic information, including age (in years), country of origin, education level, time in the US (in months), employment status, perceived childhood socioeconomic status (When you were growing up, compared to other families, did you feel that your family was: 1 = *Poorer than most*, 2 = *About the same as most*, 3 = *Richer than most*), immigration documentation status, and marital status. Separation from social network was calculated by asking each participant where her mother, father, partner, and best friend were located at the time of assessment (1 = *In the same city*, 2 = *In the US*, 3 = *Outside the US*, 4 = *In an unknown place*). The mean of the four scores (i.e., for each member of the participants' social network) reflected an overall score for separation from one's social network.

Potential interpersonal determinants of psychological distress

Attachment to Social Network: Participants completed mutual trust and communication subscales of the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) to quantify the quality of attachment between participants and each member of their social network (i.e., mothers, fathers, partners, and best friends). Items included: "I would like to have a different mother" (reverse coded item; Trust); "My partner knows when I am upset about something" (Communication); and "My best friend expects too much of me" (reverse coded item; Trust). Twenty-five questions from the Trust and Communication subscales were asked per significant relationship using a 5-point Likert-type scale (1 = *Never or almost never true*, 5 = *Always or almost always true*). Items were averaged for each member of participants' social networks to arrive at a total score for overall attachment to one's social network. Higher total scores reflected higher levels of attachment. Adequate psychometric statistics have been reported for the IPPA via tests of internal consistency and factor analyses supporting construct validity in a sample of Latina adults (De La Rosa, 2010). Internal consistency of the attachment to social network total scores in the present study ($\alpha = .97$).

Procedure

The institutional review board of a large university in the Southeastern US approved the study. To meet the aims of the present study, we analyzed data from a larger investigation

examining social and cultural determinants of health among young adult Latina recent immigrants to the US (CITATION MASKED). Eligibility criteria included: (a) being a Latina woman between the ages of 18 and 23 years old and (b) having recently immigrated to the US from a Latin American country (i.e., within the 36 months prior to baseline). Informed consent procedures and interviews were conducted in Spanish by one of four bilingual Latina female research assistants. Bilingual assessors conducted the interviews in a private location chosen by participants or in university offices.

To recruit participants, researchers employed respondent-driven sampling (RDS). RDS is an instrumental recruitment method for obtaining participants from hard-to-reach populations, such as immigrants and undocumented individuals (Salganik & Heckathorn, 2004). RDS entails requesting that each eligible participant recruit three others in her social network who meet study inclusionary criteria, and then consenting individuals refer three new potential participants. This process is continued up to five times, at which point a new, unconnected individual's referral is followed to avoid skewing the sample with participants who are too socially interconnected. Seed participants in the present study were recruited through advertisements at various community-based agencies (e.g., language schools, legal aid organizations), Latina/o health fairs, and online postings to Craigslist. Participants were paid \$45 for the assessment interview. Assessment of participants occurred between April 2013 and April 2014.

Analytic Plan

The analytic plan consisted of three major steps. First, data were evaluated for missingness. A very low number of participants ($n = 11$; 2%) were excluded from analyses because of missing data on exogenous variables in the analytic model. Data were 100% complete for the remaining 519 participants.

Second, a bivariate correlation matrix (see Table 1) was computed to examine Pearson product-moment and Spearman's rank correlation coefficients between all continuous and non-continuous variables for evidence of discriminant validity and multicollinearity. Tabachnick and Fidell (2013) suggest correlation coefficients of less than .70 between predictors to avoid multicollinearity. Two Marianismo Belief Scale subscales (Subordinate to Others and Self-Silencing to Maintain Harmony) were found to highly correlate ($r = .88$). Thus, in accordance with recommendation by Tabachnick and Fidell (2013), the subscales were combined by calculating an average of the two subscale scores for each participant. The new scale (Subordinate/Self-Silencing) yielded a Cronbach's alpha of .97.

Third, a path analysis using maximum likelihood estimation via Mplus Version 7 software (Muthén & Muthén, 1998–2008) tested the hypothesized cultural-, individual-, and interpersonal-level predictors of psychological distress. Path modeling allowed multiple regression analyses of these predictors and the three dependent variables (i.e., three subscales of the BSI). In addition, path analysis included the modeling of measurement error, as well as direct and indirect effects, which has been described as particularly well suited for testing moderation (Frazier, Tix, & Barron, 2004). Based on aforementioned hypotheses, we tested whether attachment to social network would be a significant moderator of associations between hypothesized predictors and psychological distress. Prior

to testing moderation effects, we standardized all predictor and the moderator (attachment to social network) variables to avoid problems associated with multicollinearity (Frazier et al., 2004). Participants' level of separation from their social network due to immigration was included in the path model as a covariate because of its potential influence over ability to maintain attachment to parents, peers, and romantic partners.

Results

Path Analyses

The direct and moderation effects in the path model accounted for approximately 27% of the variability in psychological distress (GSI), 20% of variability in positive symptom total (PST), and 26% of intensity of psychological distress (PSDI) during participants' initial months in the US. Path coefficients are presented in Figure 1 and summarized below.

Direct Effects

Attachment to social network was negatively related to each indicator of psychological distress: GSI ($\beta = -.11, p = .02$), PST ($\beta = -.12, p = .01$), and PSDI ($\beta = -.13, p = .03$). In each case, lower levels of attachment to social network were associated with greater levels of psychological distress.

Concerning macrosystemic cultural-level factors, direct positive associations were found between acculturative stress and all three indicators of psychological distress (see Figure 1). In terms of marianismo, participants who more strongly endorsed the belief that Latina women should be spiritual leaders of the family reported less distress (GSI), whereas women who more strongly endorsed the belief that Latinas should be the pillar of the family reported more distress (GSI). Participants who endorsed more of the marianismo Virtuous and Chaste belief indicated less intense distress (PSDI). Conversely, those who endorsed the belief that Latina women should be subordinate and self-silencing to maintain harmony in relationships reported more intense psychological distress (PSDI). As for acculturation, participants' immersion in dominant (US) society was positively associated with greater intensity of psychological distress (PSDI).

Documentation status was an individual-level predictor found to associate with psychological distress. Participants reporting undocumented status indicated higher levels of psychological distress (GSI) and symptom counts (PST).

Moderation Effects

Attachment to social network moderated associations between participants' immersion in ethnic culture and overall psychological distress (GSI) as well as positive symptom total (PST), respectively (for overall path model and significant moderated paths, see Figure 1). That is, participants reporting higher levels of attachment to social network and more ethnic identity immersion indicated lower psychological distress (see Figure 2) and lower positive symptom totals (see Figure 3) than their peers.

Attachment to social network also moderated associations between two marianismo belief dimensions (i.e., Virtuous and Chaste, Subordinate/Self-Silencing) and intensity of

psychological distress (PSDI). Participants reporting lower levels of attachment to social network and less endorsement of the marianismo belief that Latinas should be virtuous and chaste indicated more intense psychological distress than their counterparts did (see Figure 4). Additionally, participants indicating more endorsement of the marianismo belief that Latina women should be subordinate and self-silencing to maintain harmony in relationships and low attachment to their social network reported more intense psychological distress scores than their peers (see Figure 5).

Regarding individual-level factors, attachment to social network also moderated relations between time in the US and psychological distress. Specifically, individuals who lived in the US for relatively less time and indicated lower levels of attachment tended to report more psychological distress (GSI; see Figure 6) and a higher positive symptom total (PST; see Figure 7) than individuals with higher levels of attachment.

Discussion

The present study provides psychologists with an empirical understanding of correlates of psychological distress among Latina young adult immigrants during their initial months in the US.

A strength of the present study is the size of the sample. Furthermore, nearly one-fifth of the sample reported being undocumented immigrants, which is a challenging-to-reach population in psychological research. However, limitations of the present study also must be considered. Although researchers endorse respondent-driven sampling an effective method to recruit Latina/o immigrants to participate in research (Montealegre, Risser, Selwyn, McCurdy, & Sabin, 2013), it does not ensure as representative of a sample as a population-based study. The present study's sample is a community-based, convenience, non-clinical sample from Miami-Dade County. Although efforts were undertaken to include participants from major Latina/o subgroups, some groups (e.g., Latinas of Mexican and Puerto Rican origin) are underrepresented and others (Latinas of Cuban origin) are well represented in this region. Hence, the present sample was representative of Latinas living in Miami-Dade County, but not of the larger US Latina/o population. In Miami-Dade County, 1.4 million county residents are foreign-born, which constitutes over half of the population (Osterholt et al., 2016) and is a proportion greater than any other county in the US. As of the 2010 census, 65% of the Miami-Dade population identified as Latina/o of any race, with the majority being Cuban (34.3%) (Miami-Dade County Department of Planning and Zoning, 2011). Future studies are needed with nationally representative samples to assess the external validity our results. Levels of attachment to social networks may be unique among women in this sample in comparison with other Latina young adults immigrating to regions where there is limited or no political support for their presence.

The Moderating Role of Social Network Attachment

Considering the sample is distinct from past literature in terms of (a) age, (b) composition of Latina/o ethnicities, and (c) recent immigration to the US, the findings extend previous knowledge concerning attachment to social supports as protective of well-being (e.g., Burrow-Sanchez & Wrona, 2012). Participants' attachments to their social networks served

as a buffer against psychological distress under certain conditions. First, newly arrived Latina immigrants who reported lower levels of attachment to their social network reported more psychological distress than other participants reporting higher levels of attachment. Second, women who indicated lower levels of social network attachment and less time in the US indicated more distress than other participants do indicate. Third, women who reported more immersion in their ethnic identity and greater attachment to their social network indicated less distress than other participants did. Fourth, not adhering to traditional gender role beliefs (marianismo) regarding the importance of virtuousness and chastity may have conflicted with participants' attachments to their social networks, which may have exacerbated psychological distress (Nuñez et al., 2015). Likewise, high levels of attachment to one's social network may have served as a protective buffer against distress associated with subordination and silencing oneself to maintain harmony. In other words, women who were able to maintain social affiliations with others while adhering to the belief that Latina women should be subordinate and self-silence to maintain harmony may have not experienced the distress felt by their peers who also strongly endorsed the subordinate/self-silencing construct but have less attachment to social network. Overall, the present study's findings extend findings from past studies that found a positive link between attachment to family and increased psychological well-being among Latina/o immigrants (e.g., De La Rosa et al., 2015; Parsai et al., 2009) to young women who recently immigrated.

Direct Individual and Cultural Correlates of Distress After Immigration

The present findings and previous research suggest that higher levels of acculturative stress are associated with anxiety, depression, suicidal ideation, and general distress (e.g., Cano et al., 2015; Kim et al., 2014). Furthermore, this study's findings are consistent with research indicating undocumented Latina immigrants experience greater amounts of psychosocial distress than their documented counterparts (e.g., Arbona et al., 2010; Martinez et al., 2015). Moreover, Latina immigrants' acquisition of receiving (US) cultural practices—and not loss of their heritage-culture practices—during their initial months in the US was linked with psychological distress. However, many studies suggest biculturalism (i.e., managing and integrating both heritage and receiving cultural practices and tenets) as the most adaptive approach to acculturation—at least for Latina/o samples residing in the US for much longer durations than the present study's sample (e.g., David, Okazaki, & Saw, 2009; Schwartz et al., 2010). Future research is recommended to longitudinally study whether acquiring dominant US society behaviors differentially relates with psychological distress in comparison with loss of heritage-culture practices during Latina/o immigrants initial years in US.

Latina young women reported less psychological distress when they endorsed certain types of marianismo beliefs. For instance, women who more strongly endorsed the belief that Latinas should be the spiritual leaders of the family and responsible for the family's spiritual growth tended to report less psychological distress. This finding contrasts with a previous study, which found that higher endorsement of the belief that Latinas should be the spiritual leaders of the family and are responsible for the family's spiritual growth was related with experiencing greater distress (Nuñez et al., 2015). The divergent findings may be due to major differences in the ages and demographics of the two studies' samples: The present

sample consisted of mostly unmarried, young adult women who recently immigrated (ages 18–23), whereas the Nuñez et al. (2015) sample included immigrant and US-born Latinas (aged 18–74 years) with an average age of 42 years old, approximately half of whom were married, and 73% of whom lived in the US for more than ten years. Hence, participants in the Nuñez et al. (2015) sample had potentially more sources of familial spiritual burden (e.g., spouses, children, extended family) which may have contributed to the excessive psychological distress. Endorsement of the spiritual pillar belief in the present study's sample may reflect the notion that participants' adherence to traditional Latina/o norms may protect against psychological distress. Future research and clinical interventions should consider age and other contextual factors (e.g., marital status, time in US) when hypothesizing relations between spiritual pillar marianismo beliefs and psychological distress.

Women who endorsed certain other types of marianismo beliefs indicated more psychological distress in the present study as well as in past research (e.g., Nuñez et al., 2015). Participants who endorsed the belief that Latinas should be subordinate and self-silencing to maintain harmony in relationships also reported more intense psychological distress. This correlation supports the hypothesis that Latinas are posited to feel more psychological distress when they withhold their personal thoughts or needs to maintain harmony in relationships soon after immigration (Castillo et al., 2010; Nuñez et al., 2015). In addition, participants who endorsed the belief that Latinas are the family's main source of strength tended to indicate more psychological distress. Even though the aforementioned demographic differences exist between the present sample and the Nuñez et al. (2015) study, both studies found that endorsing the importance of the family pillar dimension of marianismo that is inherent to familismo in Latina/o culture seems to place young adult Latinas at risk for elevated psychological distress soon after immigration. This supports the tenet that endorsing the importance of a Latina being the main source of her family's well-being may contribute to psychological burden even among young adult Latinas soon after they have immigrated to the US. In contrast, participants endorsing the belief that Latinas should ideally be morally pure (i.e., Virtuous and Chaste) tended to report fewer symptoms of psychological distress. As postulated by past marianismo researchers (e.g., Castillo et al., 2010; Nuñez et al., 2015), the virtuous and chaste belief is a key characteristic of the traditional *marianista*. Latina young adults who do not endorse traditional beliefs about the importance of virtuousness and chastity may experience increased cultural disconnect, estrangement, and distress. More studies are needed to examine contextual conditions in which associations between varying marianismo beliefs and distress vary.

Implications for Interventions and Research

Psychologists are often well-positioned to address issues of attachment and enhance social support via culturally-sensitive outreach and interventions. Present study findings can be used by preventionists to tailor timing of outreach efforts to prevent psychological distress among recently immigrated Latina young adults. Novel efforts are encouraged to decrease potential psychological distress among recent Latina young adult immigrants. Social networks (e.g., families, friends, romantic partners) of recent Latina young adult immigrants are critical and should continue to be the focus of interventions and prevention research

(e.g., Orpinas et al., 2014; Pantin et al., 2003). For instance, interventions are needed to foster social attachments during Latina young adults' initial months in the US. Such interventions could be delivered in partnership with legal aid agencies, cultural center organizations, and language schools to help inform communities and clients of protective strategies to support their mental health. Furthermore, given that Latinas typically have close relations with extended family members (e.g., cousins, aunts/uncles, grandparents), psychometric studies of expanded versions of the IPPA should include these relations to encourage more research and intervention development.

Psychologists also are encouraged to research and provide psychoeducation and community resources concerning Latina young adult immigrants' quality of social network relationships and ethnic identity immersion activities (e.g., use of native language, engaging in traditional customs) to provide potential avenues for promotion of psychological well-being soon after immigration. For instance, studies are needed to assess for differences in support between more resourced, organized, and formal social networks (i.e., church, community center) in comparison to informal networks of acquaintances among newly arrived women who may be more likely to be undocumented. Undocumented Latina immigrants may be isolated or closed-off from formal social networks due to socioeconomic, environmental, and psychosocial barriers after moving to the US (Hurtado-De-Mendoza, Gonzales, Serrano, & Kaltman, 2014).

Newly immigrated Latina young adults who are experiencing high levels of acculturative stress also would benefit greatly from increased mental health care, outreach, prevention efforts, and support from psychologists. Undocumented Latina young adults—in particular—are in need of innovative, culturally sensitive outreach services—especially considering that undocumented immigrants receive less health care services and report more negative experiences (e.g., language barriers, discrimination) when accessing services (Ortega et al., 2007). Mental health outreach efforts and interventions could potentially assess for and integrate aspects of marianismo beliefs that are related with psychological well-being. More specifically, practitioners and researchers are encouraged to (a) assess potential aspects of marianismo beliefs seemingly connected with distress and (b) be aware of potential variability in marianismo beliefs among Latina women given certain contextual factors, such as age, relationship status, and time in the US. Clearly, more studies are needed to elucidate contexts that promote or inhibit the links between marianismo and psychological distress. In addition, to prevent the potential deleterious effects of acculturation, psychologists working with newly arrived Latinas are encouraged to attend to the underlying dynamics that may link psychological distress and dominant (US) society immersion during the acculturation process. Such dynamics could include potential pressures to acculturate or to stop adhering to traditional gender role norms (Schwartz et al., 2010).

Conclusion

With Latina/os constituting more than half of the population growth in the US in recent years, assistance in promoting immigrants' healthy transitions into US society has increasingly become a necessity for psychologists (Ortega, Rodriguez, & Vargas Bustamante, 2015). As a field, we should monitor and include multi-level factors via

outreach efforts to better assess and understand what specific factors foster well-being among Latina young adult immigrants. The present study advances current knowledge on the potential social and cultural determinants of psychological distress among young adult recent Latina immigrants during their initial years in the US. Investigating Latina/o cultural values in future studies will shed more light on potential ways to reduce and eventually eliminate current mental health disparities, such as depression, suicide, and other mental health problems (Alegría et al., 2007; Cabassa, 2003; Torres, 2010).

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References

- Alegría M, Mulvaney-Day N, Torres M, Polo A, Cao Z, Canino G. 2007; Prevalence of psychiatric disorders across Latino subgroups in the United States. *American Journal of Public Health*. 97(1): 68–75. DOI: 10.2105/ajph.2006.087205 [PubMed: 17138910]
- Allen ML, Elliott MN, Fuligni AJ, Morales LS, Hambarsoomian K, Schuster MA. 2008; The relationship between Spanish language use and substance use behaviors among Latino youth: A social network approach. *Journal of Adolescent Health*. 43(4):372–379. DOI: 10.1016/j.jadohealth.2008.02.016 [PubMed: 18809135]
- Andreeva VA, Unger JB, Yaroch AL, Cockburn MG, Baezconde-Garbanati L, Reynolds KD. 2009; Acculturation and sun-safe behaviors among US Latinos: Findings from the 2005 Health Information National Trends Survey. *American Journal of Public Health*. 99(4):734–741. DOI: 10.2105/ajph.2007.122796 [PubMed: 19150918]
- Arbona C, Olvera N, Rodríguez N, Hagan J, Linares A, Wiesner M. 2010; Acculturative stress among documented and undocumented Latino immigrants in the United States. *Hispanic Journal of Behavioral Sciences*. 32(3):362–384. DOI: 10.1177/0739986310373210 [PubMed: 25484488]
- Armsden GC, Greenberg MT. 1987; The Inventory of Parent and Peer Attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*. 16(5):427–454. DOI: 10.1007/bf02202939 [PubMed: 24277469]
- Behling, O, Law, KS. Translating questionnaires and other research instruments: Problems and solutions. Vol. 133. Thousand Oaks, CA: Sage Publications, Inc; 2000.
- Berry JW. 2001; A psychology of immigration. *Journal of Social Issues*. 57(3):615–631. DOI: 10.1111/0022-4537.00231
- Bowlby, J. Attachment and loss, Vol. I, Attachment. 2. New York, NY: Basic Books; 1982. (Original work published 1969)
- Bromberger JT, Harlow S, Avis N, Kravitz HM, Cordal A. 2004; Racial/ethnic differences in the prevalence of depressive symptoms among middle-aged women: the Study of Women's Health Across the Nation (SWAN). *American Journal of Public Health*. 94(8):1378–1385. DOI: 10.2105/ajph.94.8.1378 [PubMed: 15284047]
- Bronfenbrenner U. 1986; Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*. 22:723–742. DOI: 10.1037/0012-1649.22.6.723
- Burrow-Sanchez JJ, Wrona M. 2012; Comparing culturally accommodated versus standard group CBT for Latino adolescents with substance use disorders: A pilot study. *Cultural Diversity and Ethnic Minority Psychology*. 18(4):373–383. DOI: 10.1037/a0029439 [PubMed: 22866693]
- Cabassa LJ. 2003; Measuring acculturation: Where we are and where we need to go. *Hispanic Journal of Behavioral Sciences*. 25(2):127–146. DOI: 10.1177/0739986303025002001
- Camacho Á, González P, Castañeda SF, Simmons A, Buelna C, Lemus H, Talavera GA. 2015; Improvement in depressive symptoms among Hispanic/Latinos receiving a culturally tailored

- impact and problem-solving intervention in a community health center. *Community Mental Health Journal*. 51(4):385–392. DOI: 10.1007/s10597-014-9750-7 [PubMed: 25107309]
- Cano MÁ, Schwartz SJ, Castillo LG, Romero AJ, Huang S, Lorenzo-Blanco EI, ... Lizzi KM. 2015; Depressive symptoms and externalizing behaviors among Hispanic immigrant adolescents: Examining longitudinal effects of cultural stress. *Journal of Adolescence*. 42:31–39. DOI: 10.1016/j.adolescence.2015.03.017 [PubMed: 25899132]
- Capielo C, Delgado-Romero EA, Stewart AE. 2015; A focus on an emerging Latina/o population: The role of psychological acculturation, acculturative stress, and coping on depression symptoms among Central Florida Puerto Ricans. *Journal of Latina/o Psychology*. 3(4):209–223. DOI: 10.1037/lat0000039
- Castillo LG, Perez FV, Castillo R, Ghosheh MR. 2010; Construction and initial validation of the Marianismo Beliefs Scale. *Counseling Psychology Quarterly*. 23(2):163–175. DOI: 10.1080/09515071003776036
- Chavez-Korell S, Torres L. 2014; Perceived stress and depressive symptoms among Latino adults: The moderating role of ethnic identity cluster patterns. *The Counseling Psychologist*. 42(2):230–254. DOI: 10.1177/0011000013477905
- Colby, S; Ortman, J. Projections of the size and composition of the U.S. population: 2014 to 2060. 2015. Retrieved August 31, 2015, from <https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf>
- D'Alonzo KT. 2012; The influence of marianismo beliefs on physical activity of immigrant Latinas. *Journal of Transcultural Nursing*. 23(2):124–133. DOI: 10.1177/1043659611433872 [PubMed: 22294337]
- Darghouth S, Brody L, Alegría M. 2015; Does marriage matter? Marital status, family processes, and psychological distress among Latino men and women. *Hispanic Journal of Behavioral Sciences*. 37(4):1–21. DOI: 10.1177/0739986315606947
- David EJ, Okazaki S, Saw A. 2009; Bicultural self-efficacy among college students: Initial scale development and mental health correlates. *Journal of Counseling Psychology*. 56:211–226. DOI: 10.1037/a0015419
- De La Rosa M, Dillon FR, Ganapati EN, Rojas P, Pinto E, Prado G. 2010; Mother-daughter attachment and drug abuse among Latinas in the United States. *Journal of Drug Issues*. 40:379–404.
- De La Rosa M, Dillon FR, Rojas P, Schwartz SJ, Duan R. 2010; Latina mother–daughter dyads: Relations between attachment and sexual behavior under the influence of alcohol or drugs. *Archives of Sexual Behavior*. 39(6):1305–1319. DOI: 10.1007/s10508-009-9498-2 [PubMed: 19399605]
- De La Rosa M, Huang H, Rojas P, Dillon FR, Lopez-Quintero C, Li T, Ravelo GJ. 2015; Influence of mother–daughter attachment on substance use: A longitudinal study of a Latina community-based sample. *Journal of Studies on Alcohol and Drugs*. 76(2):307–316. DOI: 10.1177/002204261004000206 [PubMed: 25785806]
- Derogatis, LR, Fitzpatrick, M. The SCL-90-R, the Brief Symptom Inventory (BSI), and the BSI-18. In: Maruish, ME, editor *The use of psychological testing for treatment planning and outcomes assessment: Volume 3: Instruments for adults*. 3. Mahwah, NJ: Lawrence Erlbaum Associates Publishers; 2004. 1–41.
- Ford ME, Kelly PA. 2005; Conceptualizing and categorizing race and ethnicity in health services research. *Health Services Research*. 40(5 Pt 2):1658–1675. DOI: 10.1111/j.1475-6773.2005.00449.x [PubMed: 16179001]
- Frazier PA, Tix AP, Barron KE. 2004; Testing moderator and mediator effects in psychological research. *Journal of Counseling Psychology*. 15:115–134. DOI: 10.1037/0022-0167.51.1.115
- Fuertes JN, Westbrook FD. 1996; Using the Social, Attitudinal, Familial, and Environmental (S.A.F.E.) Acculturation Stress Scale to assess the adjustment needs of Hispanic college students. *Measurement and Evaluation in Counseling and Development*. 29(2):67–76.
- Gonzales, F. [Accessed on April 11, 2016] *Hispanic women in the United States*, 2007. Pew Hispanic Center Fact Sheet. 2008. from <http://pewhispanic.org/files/factsheets/42.pdf>
- Hoe M, Brekke J. 2009; Testing the cross-ethnic construct validity of the Brief Symptom Inventory. *Research on Social Work Practice*. 19(1):93–103. DOI: 10.1177/1049731508317285

- Hovey JD. 2000; Acculturative stress, depression, and suicidal ideation in Mexican immigrants. *Cultural Diversity and Ethnic Minority Psychology*. 6(2):134. doi: 10.1037//1099-9809.6.2.134 [PubMed: 10910528]
- Huang ZJ, Wong FY, Ronzio CR, Stella MY. 2007; Depressive symptomatology and mental health help-seeking patterns of US-and foreign-born mothers. *Maternal and Child Health Journal*. 11(3): 257–267. DOI: 10.1007/s10995-006-0168-x [PubMed: 17171544]
- Hurtado-De-Mendoza A, Gonzales FA, Serrano A, Kaltman S. 2014; Social isolation and perceived barriers to establishing social networks among Latina immigrants. *American Journal of Community Psychology*. 53(1–2):73–82. DOI: 10.1007/s10464-013-9619-x [PubMed: 24402726]
- Kim E, Hogge I, Salvisberg C. 2014; Effects of self-esteem and ethnic identity: Acculturative stress and psychological well-being among Mexican Immigrants. *Hispanic Journal of Behavioral Sciences*. 36(2):144–163. DOI: 10.1177/0739986314527733
- Liang CT, Salcedo J, Rivera AL, Lopez MJ. 2009; A content and methodological analysis of 35 years of Latino/a-focused research. *The Counseling Psychologist*. 37(8):1116–1146. DOI: 10.1177/0011000009338496
- Lorenzo-Blanco EI, Cortina LM. 2013; Latino/a depression and smoking: An analysis through the lenses of culture, gender, and ethnicity. *American Journal of Community Psychology*. 51(3–4): 332–346. DOI: 10.1007/s10464-012-9553-3 [PubMed: 22956250]
- Martinez CR, McClure HH, Eddy JM, Wilson DM. 2011; Time in US residency and the social, behavioral, and emotional adjustment of Latino immigrant families. *Hispanic Journal of Behavioral Sciences*. 33(3):323–349. DOI: 10.1177/0739986311411281
- Martinez O, Wu E, Sandfort T, Dodge B, Carballo-Dieguez A, Pinto R, ... Chavez-Baray S. 2015; Evaluating the impact of immigration policies on health status among undocumented immigrants: A systematic review. *Journal of Immigrant and Minority Health*. 17(3):947–970. DOI: 10.1007/s10903-013-9968-4 [PubMed: 24375382]
- Matthews KA, Gallo LC. 2011; Psychological perspectives on pathways linking socioeconomic status and physical health. *Annual Review of Psychology*. 62:501–530. DOI: 10.1146/annurev.psych.031809.130711
- Mena FJ, Padilla AM, Maldonado M. 1987; Acculturative stress and specific coping strategies among immigrant and later generation college students. *Hispanic Journal of Behavioral Sciences*. 9(2): 207–225. DOI: 10.1177/07399863870092006
- Miami-Dade County Department of Planning and Zoning. [Accessed March 6, 2017] Hispanics by country of origin in Miami-Dade. 2011. Retrieved from <https://www.miamidade.gov/planning/library/reports/data-flash/2011-hispanics-by-origin.pdf>
- Molina KM, Alcántara C. 2013; Household structure, family ties, and psychological distress among US-born and immigrant Latino women. *Journal of Family Psychology*. 27(1):147–158. DOI: 10.1037/a0031135 [PubMed: 23421842]
- Montealegre JR, Risser JM, Selwyn BJ, McCurdy SA, Sabin K. 2013; Effectiveness of respondent driven sampling to recruit undocumented Central American immigrant women in Houston, Texas, for an HIV behavioral survey. *AIDS and Behavior*. 17:719–727. DOI: 10.1007/s10461-012-0306-y [PubMed: 22961500]
- Moradi B, Risco C. 2006; Perceived discrimination experiences and mental health of Latina/o American persons. *Journal of Counseling Psychology*. 53(4):411–421. DOI: 10.1037/0022-0167.53.4.411
- Moreno CL. 2007; The relationship between culture, gender, structural factors, abuse, trauma, and HIV/AIDS for Latinas. *Qualitative Health Research*. 17(3):340–352. DOI: 10.1177/1049732306297387 [PubMed: 17301342]
- Muthén, B, Muthén, LK. Mplus (Version 7). [Computer software]. Los Angeles, CA: Authors; 1998–2008.
- Núñez A, González P, Talavera GA, Sanchez-Johnsen L, Roesch SC, Davis SM, ... Gallo LC. 2015; Machismo, marianismo, and negative cognitive-emotional factors: Findings from the Hispanic community health study/study of Latinos sociocultural ancillary study. *Journal of Latina/o Psychology*. 4(1):1–59. DOI: 10.1037/lat0000050

- Orpinas P, Reidy MC, Lacy ME, Kogan SM, Londoño-McConnell A, Powell G. 2014 Familias fuertes a feasibility study with Mexican immigrants living in low-income conditions in the Southeastern United States. *Health Promotion Practice*.
- Ortega AN, Fang H, Perez VH, Rizzo JA, Carter-Pokras O, Wallace SP, Gelberg L. 2007; Health care access, use of services, and experiences among undocumented Mexicans and other Latinos. *Archives of Internal Medicine*. 167(21):2354–2360. DOI: 10.1001/archinte.167.21.2354 [PubMed: 18039995]
- Ortega AN, Rodriguez HP, Vargas Bustamante A. 2015; Policy dilemmas in Latino health care and implementation of the Affordable Care Act. *Annual Review of Public Health*. 36(1):525–544. DOI: 10.1146/annurev-publhealth-031914-122421
- Osterholt, J; Gomez, L; Woerner, M; Armada, M; Hesler, R; Lucas, J; ... Martinez, D. [Accessed March 6, 2017] Miami-Dade County profiles: American community survey. 2016. Sep, Retrieved from www.miamidade.gov/business/library/reports/2011-2015-acm-multi-year-profile.pdf
- Overbeek GJ, Stattin H, Vermulst A, Ha T, Engels RC. 2007; Parent-child relationships, partner relationships, and emotional adjustment: A birth-to-maturity prospective study. *Developmental Psychology*. 43(2):429–437. DOI: 10.1037/0012-1649.43.2.429 [PubMed: 17352550]
- Pantin H, Coatsworth JD, Feaster DJ, Newman FL, Briones E, Prado G, ... Szapocznik J. 2003; Familias Unidas: The efficacy of an intervention to promote parental investment in Hispanic immigrant families. *Prevention Science*. 4(3):189–201. DOI: 10.5093/in2011v20n1a6 [PubMed: 12940469]
- Parsai M, Voisine S, Marsiglia FF, Kulis S, Nieri T. 2009; The protective and risk effects of parents and peers on substance use, attitudes, and behaviors of Mexican and Mexican American female and male adolescents. *Youth & Society*. 40(3):353–376. DOI: 10.1177/0044118x08318117 [PubMed: 19478992]
- Rhodes SD, Mann L, Simán FM, Song E, Alonzo J, Downs M, ... Reboussin BA. 2015; The impact of local immigration enforcement policies on the health of immigrant Hispanics/Latinos in the United States. *American Journal of Public Health*. 105(2):329–337. DOI: 10.2105/ajph.2014.302218 [PubMed: 25521886]
- Rivera FI, Guarnaccia PJ, Mulvaney-Day N, Lin JY, Torres M, Alegría M. 2008; Family cohesion and its relationship to psychological distress among Latino groups. *Hispanic Journal of Behavioral Sciences*. 30(3):357–378. DOI: 10.1177/0739986308318713 [PubMed: 19444326]
- Salganik MJ, Heckathorn DD. 2004; Sampling and estimation in hidden populations using respondent-driven sampling. *Sociological Methodology*. 34(1):193–240. DOI: 10.1111/j.0081-1750.2004.00152.x
- Sanchez D, Whittaker TA, Hamilton E, Zayas LH. 2015; Perceived discrimination and sexual precursor behaviors in Mexican American preadolescent girls: The role of psychological distress, sexual attitudes, and marianismo beliefs. *Cultural Diversity and Ethnic Minority Psychology*. doi: 10.1037/cdp0000066
- Schwartz SJ, Unger JB, Zamboanga BL, Szapocznik J. 2010; Rethinking the concept of acculturation: Implications for theory and research. *American Psychologist*. 65(4):237–251. DOI: 10.1037/a0019330 [PubMed: 20455618]
- Schwartz SJ, Weisskirch RS, Zamboanga BL, Castillo LG, Ham LS, Huynh QL, ... Davis MJ. 2011; Dimensions of acculturation: Associations with health risk behaviors among college students from immigrant families. *Journal of Counseling Psychology*. 58(1):27–41. DOI: 10.1037/a0021356 [PubMed: 21171742]
- Stephenson M. 2000; Development and validation of the Stephenson Multigroup Acculturation Scale (SMAS). *Psychological Assessment*. 12(1):77–88. DOI: 10.1037/1040-3590.12.1.77 [PubMed: 10752366]
- Tabachnick, BG, Fidell, LS. Using multivariate statistics. 6. Boston, MA: Allyn and Bacon; 2013.
- Torres L. 2010; Predicting levels of Latino depression: Acculturation, acculturative stress, and coping. *Cultural Diversity and Ethnic Minority Psychology*. 16(2):256–263. DOI: 10.1037/a0017357 [PubMed: 20438164]

- Torres L, Taknint JT. 2015; Ethnic microaggressions, traumatic stress symptoms, and Latino depression: A moderated mediational model. *Journal of Counseling Psychology*. 62(3):393.doi: 10.1037/cou0000077 [PubMed: 25867692]
- US Census Bureau. State and county quick facts. 2010. Retrieved on March 8, 2016, from <http://quickfacts.census.gov/qfd/states/12/12086.html>
- Valdez CR, Dvorscek MJ, Budge SL, Esmond S. 2011; Provider perspectives about Latino patients: Determinants of care and implications for treatment. *The Counseling Psychologist*. 39(4):497–526. DOI: 10.1177/0011000010385012 [PubMed: 21643446]
- Viruell-Fuentes EA. 2007; Beyond acculturation: Immigration, discrimination, and health research among Mexicans in the United States. *Social Science & Medicine*. 65:1524–1535. DOI: 10.1016/j.socscimed.2007.05.0 [PubMed: 17602812]

Figure 1.

Path model results showing (a) significant and moderated predictors associated with psychological distress indexes, and (b) the moderating role of attachment to social network. Dashed line represents a nonsignificant direct path moderated by attachment to social network.

Figure 2.
The relation between ethnic identity immersion and global severity index at low and high levels of attachment to social network during initial months in the United States.

Figure 3. The relation between ethnic identity immersion and positive symptom total at low and high levels of attachment to social network during initial months in the United States.

Figure 4.
The relation between endorsing virtuous and chaste *marianismo* beliefs and positive symptom distress index at low and high levels of attachment to social network during initial months in the United States.

Figure 5. The relation between endorsing subordinate/self-silencing *marianismo* beliefs and positive symptom distress index at low and high levels of attachment to social network during initial months in the United States.

Figure 6. The relation between amount of time in United States and global severity index at low and high levels of attachment to social network during initial months in the United States.

Figure 7.

The relation between amount of time in United States and positive symptom total at low and high levels of attachment to social network during initial months in the United States.

Table 1

Descriptive Statistics and Correlations between Predictors, Moderator, and Outcome Variables

Variables	M. Mdn or %	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. BSI-Global Severity Index	0.34	0.67	1.00																	
2. BSI-Positive Symptom Total	9.42	13.73	.88**	1.00																
3. BSI-Positive Symptom Distress Index	1.46	0.76	.75**	.50**	1.00															
4. Separation from social network	1.93	0.70	.01	-.05	.11	1.00														
5. Documentation status ^a	83% authorized	n/a	.02	.01	-.06	-.27**	1.00													
6. Marital status ^b	14% married	n/a	.04	.04	-.03	.01	.01	1.00												
7. Age (years)	20.81	1.82	-.02	-.02	-.01	.06	.05	.10*	1.00											
8. Time in the U.S. (months)	11.52	9.94	.01	.11*	-.18**	-.21**	.18**	.03	.02	1.00										
9. Employment status ^c	34% employed	n/a	.07	.06	.06	.06	.05	-.07	.07	.03	1.00									
10. Education level ^d	Mdn = 2	n/a	-.03	-.04	-.02	.01	.04	-.03	.31**	-.14**	.25**	1.00								
11. Childhood socioeconomic status	2.00	0.48	.04	.02	-.01	-.07	.13**	.02	-.05	.04	-.02	.05	1.00							
12. Marianismo – Family pillar	3.27	0.65	.04	.08	-.06	.02	-.07	-.03	.01	.10*	.06	.01	.03	1.00						
13. Marianismo – Virtuous and chaste	2.98	0.71	.02	.02	.06	.04	-.09	-.09*	-.09*	-.09*	.07	-.06	.01	.69**	1.00					
14. Marianismo – Subordinate/self-silencing	2.31	0.85	-.02	-.14*	.34**	.12**	-.15**	-.11*	-.11**	-.31**	-.03	-.04	-.06	.32**	.59**	1.00				
15. Marianismo – Spiritual pillar	2.86	0.77	-.04	-.10*	.12*	.16**	-.13**	-.10*	.01	-.16**	.05	.03	-.03	.63**	.66**	.60**	1.00			
16. Acculturative stress	1.44	1.32	.29**	.36**	.04	-.18**	.17**	.08	.05	.37**	.09*	-.06	.02	.23**	.01	-.39**	-.12**	1.00		
17. Acculturation – Ethnic society immersion	3.25	0.63	.01	.06	-.21*	-.07	.11*	.05	.15**	.34**	.03	-.03	.01	.32**	.10*	-.24**	.06	.39**	1.00	
18. Acculturation – Dominant society immersion	2.59	0.71	.01	-.03	.19*	-.01	.08	-.07	-.09*	-.06	.10*	.05	.06	.15**	.23**	.25**	.15**	-.12**	.32**	1.00
19. Attachment with social network	3.55	0.63	-.06	-.01	-.28**	-.03	.15**	.09*	.08	.32**	.05	.03	.06	.19**	.02	-.28**	-.04	.30**	.48**	-.03

Note. BSI = Brief Symptom Inventory.

* = $p < .01$,

** = $p < .001$;

^a0= undocumented, 1= documented;

^b0 = not married/not partnered. 1 = married/partnered;

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0 = unemployed, 1 = employed;
1 = less than high school, 2 = high school diploma, 3 = trade school, 4 = bachelor's degree, 5 = post-graduate work